ISRCTN13297409 https://doi.org/10.1186/ISRCTN13297409

A study comparing the level of absorption of sildenafil from Sildenafil 100 mg Oral Films versus Viagra® 100 mg tablets and the effect of food on absorption of sildenafil from Sildenafil 100 mg Oral Films in healthy men

Submission date
13/07/2018

Recruitment status
No longer recruiting

Registration date
04/09/2018

Overall study status
Completed

Last Edited
12/03/2019

Condition category
Urological and Genital Diseases

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
A new oral film containing sildenafil citrate, the active ingredient in Viagra, which is used to treat erectile dysfunction (ED), has been recently developed. It dissolves very rapidly in the oral mouth, with no need for drinking or chewing, thus providing an alternative to the marketed solid oral forms (tablets) in the treatment of ED. This study aims to investigate whether the oral film is absorbed as well as the solid oral form, and to determine if food has an effect on the absorption of this new film.

Who can participate?
Healthy men aged 18-45 years

What does the study involve?
The study has three periods, and participants will be randomly allocated into one section and then will rotate through each period such that every participant completes all periods of the trial but the order will vary depending on the period they are initially randomised into:
Period A: a single dose of Sildenafil 100 mg Oral Film after a high-fat breakfast
Period B: a single dose of Sildenafil 100 mg Oral Film after fasting overnight
Period C: a single dose of Sildenafil (Viagra®) 100 mg film-coated tablet after fasting overnight
There will be a break of at least 7 days between the periods.
The blood level of sildenafil is measured pre-dose (0) and 10, 15, 20, 30, 40, 50 minutes, 1 hour, 1:20, 1:40, 2, 2:20, 2:40, 3, 4, 5, 6, 8, 10, 12, 16 and 24 hours after the dose.

What are the possible benefits and risks of participating?
There are no known benefits or risks to participants taking part in this study.

Where is the study run from?
Algorithme Pharma Mount-Royal, Quebec, Canada.

When is the study starting and how long is it expected to run for?
February 2017 to March 2018

Who is funding the study?
IBSA Institut Biochimique SA (Switzerland)

Who is the main contact?
Dr Eric Sicard
esicard@algopharm.com

Contact information

Type(s)
Scientific

Contact name
Dr Eric Sicard

Contact details
Algorithme Pharma, 1200 Beaumont Ave
Mount-Royal, Quebec
Canada
H3P 3P1

Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
ISS-P7-882 (Sponsor Project No 17CDN-SDF02)

Study information

Scientific Title
Single Dose Crossover Comparative Bioavailability Study under Fasting Conditions and Food Effect Study of Sildenafil 100 mg Oral Films Versus Viagra® (Sildenafil) Tablets in Healthy Male Volunteers

Study objectives
To determine whether Sildenafil 100 mg oral film is bioequivalent to Viagra® 100 mg film-coated tablet under fasting conditions and evaluate the food effect on the absorption of sildenafil from Sildenafil 100 mg oral film.

Ethics approval required
Old ethics approval format

Ethics approval(s)
IRB Services (372 Hollandview Trail, Suite 300, Aurora, Ontario, Canada L4G 0A5), 13/06/2017, Pro00021969
Health Canada, 23/06/2017, 206698

Study design
Interventional single-center single dose laboratory-blinded 3-period 3-sequence, randomised crossover
study

Primary study design
Interventional

Secondary study design
Randomised cross over trial

Study setting(s)
Other

Study type(s)
Other

Participant information sheet
Not available in web format, please use contact details below to request a participant information sheet

Health condition(s) or problem(s) studied
Erectile dysfunction

Interventions
Three treatments are administered as a single 100 mg oral dose. Each of the 45 healthy male subjects receives in each period one of the following treatments, according to a randomized, 3-period, crossover design. Subjects are assigned to the order of treatments in the 3 study periods according to the randomisation list, and are randomised to receive one of the treatments in period 1, one in period 2 and one in period 3. Subjects are assigned a number at the check-in of period 1. Each subject retains this number throughout the study. The order of investigational product administration is sequentially assigned from a computer-generated randomised list.
Treatment-1: Sildenafil 100 mg Oral Film, single oral dose in fed conditions (Thirty minutes after the start of a standardized high-fat, high-calorie breakfast)
Treatment-2: Sildenafil 100 mg Oral Film, single oral dose in fasting conditions
Treatment-3: Sildenafil (Viagra®) 100 mg film-coated tablet, single oral dose in fasting conditions
The drug administrations is separated by at least 7 calendar days.

Intervention Type
Drug

Phase

Phase I

Drug/device/biological/vaccine name(s)
Sildenafil IBSA 100 mg oral film Viagra® (sildenafil citrate) 100 mg film-coated tablet

Primary outcome measure
Pharmacokinetic parameters (Cmax, AUC, Tmax, Thalf, λZ) for the absorption of sildenafil. The concentration of sildenafil in plasma is measured at the following time-points: pre-dose (0) and 10, 15, 20, 30, 40, 50 min, 1 h, 1:20, 1:40, 2, 2:20, 2:40, 3, 4, 5, 6, 8, 10, 12, 16 and 24 h after the dose in each of the three study periods. Each study period is separated by at least 7 calendar days. Plasma samples are assayed for sildenafil using a validated high performance liquid chromatography (HPLC) method with tandem mass spectrometry (MS/MS) detection. The lower limit of quantitation (LOQ) and upper limit of quantitation (ULQ) are 1.00 and 1000.00 ng/ml for sildenafil.

Secondary outcome measures
1. Record of adverse events throughout the study. Any new illness, or worsening of a concomitant illness, and the medically relevant abnormalities in laboratory tests, physical examination and in the measurements of vital signs performed after drug administration or at the end of the study are to be recorded as adverse events. The period of observation of adverse events extends from the pre-trial evaluation until the collection of the last blood sample of the study. During the study, all adverse events spontaneously reported by the subject, observed by the clinical staff, or elicited by general questioning are recorded at any time. Subjects are questioned on their health status at the beginning of each study period and before each departure from the clinical site.
2. Vital signs: Blood pressure, pulse rate and body temperature are measured and recorded prior to each drug administration. Blood pressure and pulse rate are also recorded approximately 1, 2 and 4.5 hours after each drug administration.
3. Physical examination, performed at screening and at final visit after the last study period.
4. Laboratory analysis: haematology, blood chemistry and urinalysis laboratory tests performed at screening and at final visit after the last study period.

Overall study start date
24/02/2017

Completion date
22/03/2018

Eligibility

Key inclusion criteria
1. Aged 18-45 years
2. BMI of 18.5 - 30.0 kg/m²
3. Non-smoker or ex-smoker
4. No clinically significant diseases or findings upon physical examination and/or clinical laboratory evaluations (hematology, general biochemistry, lipid profile, ECG and urinalysis)
5. Provided signed informed consent

Participant type(s)
Healthy volunteer

Age group
Adult

Lower age limit
18 Years

Upper age limit
45 Years

Sex
Male

Target number of participants
45

Key exclusion criteria
1. Presence or history within 28 days of any tongue piercings
2. Presence of partials, braces or dentures
3. History of significant hypersensitivity to sildenafil or related products (including excipients of formulations)
4. History of severe hypersensitivity reactions to any drugs
5. Significant gastrointestinal, liver or kidney disease, or any other conditions known to:
5.1. Interfere with the absorption, distribution, metabolism or excretion of drugs
5.2. Potentiate or predispose to undesired effects such as severe liver failure, acute or chronic liver dysfunction or cholestatic jaundice
6. History of significant gastrointestinal, liver or kidney disease that may have affected drug bioavailability
7. Significant cardiovascular, pulmonary, hematological, neurological, psychiatric, endocrine, immunological or dermatological disease
8. Suicidal tendencies, severe depression, state of confusion or other clinically relevant psychiatric diseases
9. History of or disposition to seizures
10. Presence of out-of-range cardiac interval on the screening ECG or other clinically significant ECG abnormalities
11. Use of organic nitrate medications in the previous 28 days
12. History of vision or hearing problems related to the PDE5 inhibitor pharmacological class
13. Presence or history of priapism
14. Anatomical deformation of the penis
15. History of ophthalmological disease, such as non-arteritic anterior ischemic optic neuropathy or retinitis pigmentosa
16. Known presence of rare hereditary problems of:
16.1. Galactose and/or lactose intolerance
16.2. Lactase deficiency
16.3. Glucose-galactose malabsorption
17. Maintenance therapy with any drug or significant history of drug dependency or alcohol abuse (> 3 units of alcohol per day, intake of excessive alcohol (acute or chronic))
18. Positive screening for alcohol and/or drug abuse
19. Use of enzyme modifying drugs in the previous 28 days, including:
19.1. Strong inhibitors of CYP enzymes (e.g. cimetidine, fluoextine, quinidine, erythromycin, ciprofloxacin, fluconazole, ketoconazole, diltiazem and HIV antivirals)
19.2. Strong inducers of CYP enzymes (e.g. barbiturates, carbamazepine, glucocorticoids,

phenytoin, rifampin and St Johns Wort)
20. History of tuberculosis and/or prophylaxis for tuberculosis
21. Positive results to the following tests:
21.1. HIV Ag/Ab Combo
21.2. Hepatitis B surface antigen (HBsAG (B) (hepatitis B))
21.3. Hepatitis C Virus (HCV (C))
22. Taken sildenafil in the previous 28 days
23. Donated 500 ml or more of blood in the previous 56 days

Date of first enrolment
15/06/2017

Date of final enrolment
01/08/2017

Locations

Countries of recruitment
Canada

Study participating centre
Algorithme Pharma
1200 Beaumont Ave.
Mount-Royal, Quebec
Canada
H3P 3P1

Sponsor information

Organisation
IBSA Institut Biochimique S.A.

Sponsor details
Via del Piano
Pambio-Noranco
Switzerland
6915

Sponsor type
Industry

ROR
https://ror.org/051tj3a26

Funder(s)

Funder type
Not defined

Funder Name
IBSA Institut Biochimique S.A.

Results and Publications

Publication and dissemination plan
Planned publication in a peer-reviewed journal

Intention to publish date
01/12/2018

Individual participant data (IPD) sharing plan
Full study data will be stored in a database of the sponsor.

IPD sharing plan summary
Stored in repository

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Basic results		08/03/2019		No	No